



KRAMER ELECTRONICS LTD.

# PRELIMINARY USER MANUAL

MODEL:

**WP-577VH**

Wall Plate



## WP-577VH Wall Plate Quick Start Guide

This guide helps you install and use your product for the first time. For more detailed information, go to [http://www.kramerelectronics.com/support/product\\_downloads.asp](http://www.kramerelectronics.com/support/product_downloads.asp) to download the latest manual or scan the QR code on the left.

### Step 1: Check what's in the box

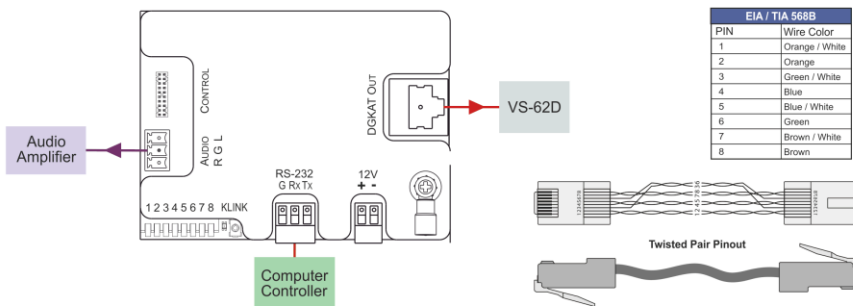
- ☒ **WP-577VH** HDMI and PC Graphics Wall Plate
- ☒ 1 Quick start guide
- ☒ Power adapter (12V DC)



Save the original box and packaging materials in case your Kramer product needs to be returned to the factory for service.

### Step 2: Connect the outputs

Always switch off the power to all devices before connecting them to your **WP-577VH**.



For optimum performance we recommend the Kramer **BC-DGKat524** (CAT 5 24 AWG), **BC-DGKat623** (CAT 6 23 AWG), and the **BC-DGKat7a23** (CAT 7a 23 AWG) cables. These specially built cables significantly outperform regular CAT 5/ CAT 6/CAT 7a cables.

**Note:** The **WP-577VH** cannot work with unshielded cables.

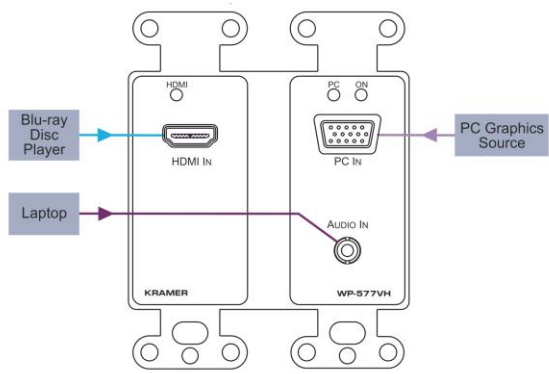
### Step 3: Set the DIP-switches

| # | Feature                | Function  | DIP-switch                            |
|---|------------------------|---|---------------------------------------|
| 1 | Audio Auto/Manual Mode | Sets the audio selection mode.<br><b>Note:</b> This setting has no effect when the PC graphics source is selected         | On—Auto<br>Off—Manual                 |
| 2 | Video Auto/Manual Mode | Sets the video selection mode   | On—Auto<br>Off—Manual                 |
| 3 | Input Priority Mode    | Sets the video input automatic selection.<br><b>Note:</b> This selection is available only if DIP-switch 2 is set to Auto | On—Priority<br>Off—Last connected     |
| 4 | Audio Manual Mode      | Sets the audio selection mode   | On—Force embedded<br>Off—Force analog |
| 5 |                        |   |                                       |
| 6 | For future use         |   |                                       |
| 7 |                        |   |                                       |
| 8 | Reserved               |   |                                       |

| DIP-switch #1 | DIP-switch #4 | Analog Audio Present | Audio Used     |
|---------------|---------------|----------------------|----------------|
| On            | Not relevant  | Yes                  | Analog         |
|               |               | No                   | HDMI           |
| Off           | On            | Not relevant         | HDMI           |
| Off           | Off           | Yes                  | Analog         |
|               |               | No                   | Analog (=mute) |

---

### Step 4: Connect the inputs



---

### Step 5: Connect the power



If required, connect the power adapter to the **WP-577VH** and plug the adapter into the mains electricity.

---

### Step 6: Install the WP-577VH

Mount the device in a suitable wall box.

---

# Contents

|           |  |           |
|-----------|--|-----------|
| <b>1</b>  | <b>Introduction</b>                                  | <b>1</b>  |
| <b>2</b>  | <b>Getting Started</b>                               | <b>2</b>  |
| 2.1       | Achieving the Best Performance                       | 2         |
| 2.2       | Safety Instructions                                  | 3         |
| 2.3       | Recycling Kramer Products                            | 3         |
| <b>3</b>  | <b>Overview</b>                                      | <b>4</b>  |
| 3.1       | Using TP cables                                      | 5         |
| <b>4</b>  | <b>Defining the WP-577VH Wall Plate</b>              | <b>6</b>  |
| 4.1       | Defining the WP-577VH                                | 6         |
| <b>5</b>  | <b>Connecting the WP-577VH</b>                       | <b>9</b>  |
| 5.1       | Connecting the RS-232 Serial Port to a Remote Device | 10        |
| <b>6</b>  | <b>Principles of Operation</b>                       | <b>11</b> |
| 6.1       | Active Input Selection                               | 11        |
| 6.2       | Audio Signal Priority                                | 12        |
| 6.3       | Active and Passive Data Modes                        | 12        |
| 6.4       | Input Connection Timeout                             | 13        |
| <b>7</b>  | <b>Operating the WP-577VH</b>                        | <b>14</b> |
| 7.1       | Selecting an Input                                   | 14        |
| 7.2       | Selecting Active or Passive Data Mode                | 14        |
| <b>8</b>  | <b>Configuring and Maintaining the WP-577VH</b>      | <b>15</b> |
| 8.1       | Setting the Configuration DIP-switch                 | 15        |
| 8.2       | Updating the Firmware                                | 16        |
| <b>9</b>  | <b>Wiring the DGKat TP RJ-45 Connectors</b>          | <b>17</b> |
| <b>10</b> | <b>Technical Specifications</b>                      | <b>18</b> |
| 10.1      | Default Communication Parameters                     | 18        |
| <b>11</b> | <b>Protocol 3000</b>                                 | <b>19</b> |
| 11.1      | Kramer Protocol 3000 Syntax                          | 19        |
| 11.2      | Kramer Protocol 3000 Commands                        | 22        |

## Figures

|  |    |
|--|----|
| Figure 1: WP-577VH Wall Plate Front Panel    | 6  |
| Figure 2: WP-577VH Wall Plate Rear Panel     | 8  |
| Figure 3: Connecting the WP-577VH Wall Plate | 9  |
| Figure 4: The Configuration DIP-switch       | 15 |
| Figure 5: TP Pinout Wiring                   | 17 |

---

# 1 Introduction

Welcome to Kramer Electronics! Since 1981, Kramer Electronics has been providing a world of unique, creative, and affordable solutions to the vast range of problems that confront video, audio, presentation, and broadcasting professionals on a daily basis. In recent years, we have redesigned and upgraded most of our line, making the best even better!

Our 1,000-plus different models now appear in 11 groups that are clearly defined by function: GROUP 1: Distribution Amplifiers; GROUP 2: Switchers and Routers; GROUP 3: Control Systems; GROUP 4: Format/Standards Converters; GROUP 5: Range Extenders and Repeaters; GROUP 6: Specialty AV Products; GROUP 7: Scan Converters and Scalers; GROUP 8: Cables and Connectors; GROUP 9: Room Connectivity; GROUP 10: Accessories and Rack Adapters and GROUP 11: Sierra Video Products.

Congratulations on purchasing your Kramer **WP-577VH/WP-577VHE** *Wall Plate* which is ideal for the following typical applications:

- Small to medium to small boardroom connectivity
- Interfacing with a variety of source to remote displays in schools and businesses
- Bring-your-own laptop environments

---

## 2 Getting Started

We recommend that you:

- Unpack the equipment carefully and save the original box and packaging materials for possible future shipment
- Review the contents of this user manual



Go to [http://www.kramerelectronics.com/support/product\\_downloads.asp](http://www.kramerelectronics.com/support/product_downloads.asp) to check for up-to-date user manuals, application programs, and to check if firmware upgrades are available (where appropriate).

### 2.1 Achieving the Best Performance

To achieve the best performance:

- Use only good quality connection cables (we recommend Kramer high-performance, high-resolution cables) to avoid interference, deterioration in signal quality due to poor matching, and elevated noise levels (often associated with low quality cables)
- Do not secure the cables in tight bundles or roll the slack into tight coils
- Avoid interference from neighboring electrical appliances that may adversely influence signal quality
- Position your Kramer **WP-577VH Wall Plate** away from moisture, excessive sunlight and dust



This equipment is to be used only inside a building. It may only be connected to other equipment that is installed inside a building.

## 2.2 Safety Instructions



**Caution:** There are no operator serviceable parts inside the unit

**Warning:** Use only the Kramer Electronics input power wall adapter that is provided with the unit

**Warning:** Disconnect the power and unplug the unit from the wall before installing

## 2.3 Recycling Kramer Products

The Waste Electrical and Electronic Equipment (WEEE) Directive 2002/96/EC aims to reduce the amount of WEEE sent for disposal to landfill or incineration by requiring it to be collected and recycled. To comply with the WEEE Directive, Kramer Electronics has made arrangements with the European Advanced Recycling Network (EARN) and will cover any costs of treatment, recycling and recovery of waste Kramer Electronics branded equipment on arrival at the EARN facility. For details of Kramer's recycling arrangements in your particular country go to our recycling pages at <http://www.kramerelectronics.com/support/recycling/>.

---

## 3 Overview

The **WP-577VH** accepts the following signals:

- HDMI and PC graphics video
- Unbalanced, stereo audio
- An RS-232 control or data signal

The **WP-577VH** encodes these signals and transmits the encoded signal via DGKat cable to a compatible DGKat switcher or receiver (for example, the **VS-62D**, **TP-578HDCP**, **TP-574** or **PT-572+**). The stereo audio can be embedded into the output signal.

Using the **WP-577VH**, you can also communicate via the twisted pair cable:

- EDID (Extended Display Information Data)
- HPD (Hot Plug Detect) signals from the display device to the source

The **WP-577VH** features:

- HDCP support
- HDTV compatibility
- Support for HDMI with x.v. Color™ and 3D
- Support for digital audio formats
- Automatic live input detection based on 5V presence
- Automatic switching capabilities to the last connected or priority video input
- Automatic analog audio detection and embedding
- EDID PassThru – Passes EDID/HDCP signals from source to display
- Compatibility with all Kramer K-LINK devices which allows the use of RS-232 for both control of other Kramer devices and sending data to remote, external RS-232 devices
- Equalization and reclocking of the data



- A maximum data rate of 4.95Gbps (1.65Gbps bandwidth per graphic channel)
- Support for Protocol 3000
- PowerConnectPlus—a single connection to the transmitter or receiver powers both units. The higher voltage PowerConnectPlus also powers regular PowerConnect devices via auto-negotiation

**Note:** Current receivers are not PowerConnectPlus compliant and therefore require an independent power supply.

The **WP-577VH** supports a range of:

- Up to 90m (295ft) at 1080i, or up to 30m (98ft) at 1080p on shielded **BC-DGKat524** cable
- Up to 90m (295ft) at 1080i, or up to 70m (230ft) at 1080p on shielded **BC-DGKat623** cable
- Up to 100m (330ft) at 1080i or up to 90m (295ft) at 1080p on shielded **BC-DGKat7a23** cable

**Note:** The transmission range depends on the signal resolution, graphics card and display used. The distance using non-Kramer CAT 6 and CAT 7a cables may not reach these ranges.

### 3.1 Using TP cables

Kramer engineers have developed special twisted pair cables to best match our digital twisted pair products; the Kramer **BC-DGKat524** (CAT 5 24 AWG), the Kramer **BC-DGKat623** (CAT 6 23 AWG), and the Kramer **BC-DGKat7a23** (CAT 7a 23 AWG) cables. These specially built cables significantly outperform regular CAT 5/CAT 6/CAT 7a cables.

**Note:** The **WP-577VH** cannot work with unshielded cables. The cable ground shield must be connected/soldered to the shield of both RJ-45 connectors.



**Warning:** Using a TP cable that is incorrectly wired will prevent Power Connect™ from working

# 4 Defining the WP-577VH Wall Plate

## 4.1 Defining the WP-577VH

[Figure 1](#) defines the front panel of the **WP-577VH**.

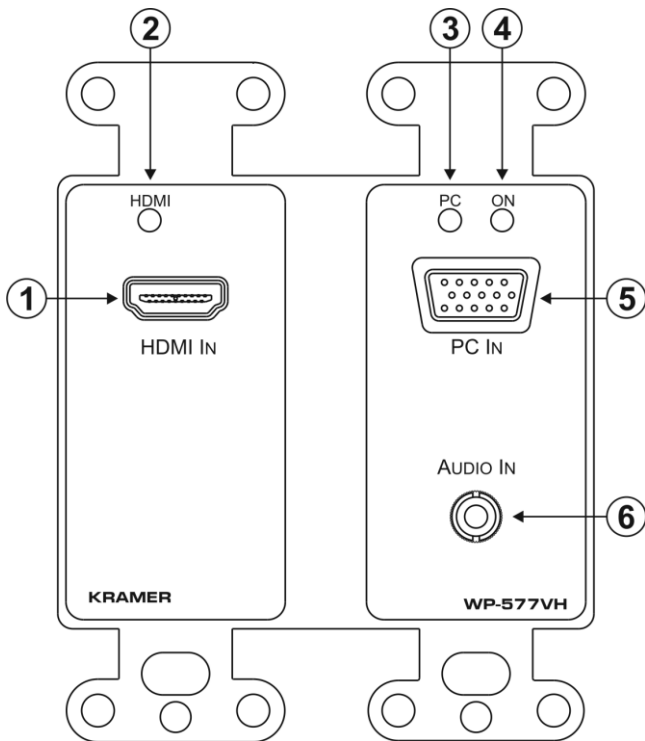


Figure 1: WP-577VH Wall Plate Front Panel

| # | Feature                 | Function  |
|---|-------------------------|---|
| 1 | HDMI IN Input Connector | Connect to the HDMI source  |
| 2 | HDMI Signal LED         | Lights green when all the following are true: <ul style="list-style-type: none"><li>• The port is selected</li><li>• There is a valid HDMI signal present</li><li>• The signal is being routed via the DGKat output</li></ul> Lights red when any of the following is true: <ul style="list-style-type: none"><li>• No signal is connected</li><li>• The signal is not valid</li><li>• Routing is not working</li></ul> |

| # | Feature                         | Function   |
|---|---------------------------------|--|
| 3 | <i>PC Graphics Signal LED</i>   | <p>Lights green when all the following are true:</p> <ul style="list-style-type: none"> <li>• The port is selected</li> <li>• There is a valid PC graphics signal present</li> <li>• The signal is being routed via the DGKat output</li> </ul> <p>Lights red when any of the following is true:</p> <ul style="list-style-type: none"> <li>• No signal is connected</li> <li>• The signal is not valid</li> <li>• Routing is not working</li> </ul> |
| 4 | <i>ON LED</i>                   | <p>The LED indicates the following:</p> <ul style="list-style-type: none"> <li>• Lights green—the device receives adequate power</li> <li>• Lights red—the power is insufficient and 24V is needed from the receiver</li> </ul>  |
| 5 | <i>PC IN Input Connector</i>    | Connect to the PC graphics source  |
| 6 | <i>AUDIO IN 3.5mm Mini Jack</i> | Connect to the unbalanced, stereo audio source   |

Figure 2 defines the rear panel of the **WP-577VH**.

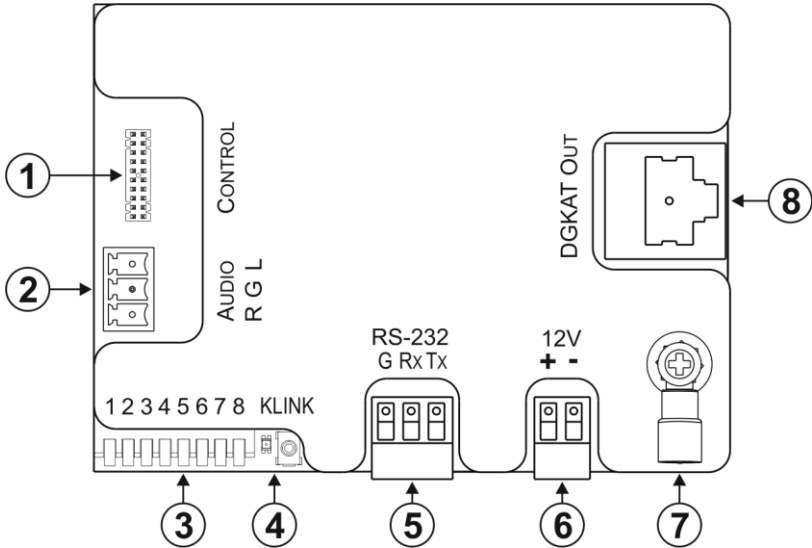


Figure 2: WP-577VH Wall Plate Rear Panel

| # | Feature                      | Function   |
|---|------------------------------|--|
| 1 | CONTROL Connector            | For future use   |
| 2 | AUDIO 3-pin Terminal Block   | Connect to the unbalanced, stereo audio acceptor   |
| 3 | SETUP 8-way DIP-switch       | Sets the device behavior, (see <a href="#">Section 8.1</a> )   |
| 4 | K-LINK Mode Switch and LED   | Press the switch to toggle between active and passive data modes, (see <a href="#">Section 6.3</a> ).<br>The LED indicates the following: <ul style="list-style-type: none"><li>• Lights green—the device is in active mode</li><li>• Lights red—the device is in passive mode</li></ul> |
| 5 | RS-232 3-pin Terminal Block  | Connect to a remote, serial signal source or acceptor (for example, a PC or a device to be controlled via a serial port).<br><b>Note:</b> Serial commands are transmitted even when the video signal is absent   |
| 6 | 12V DC Connector             | Connect to the power adapter   |
| 7 | Earth Terminal               | Connect to the common ground (optional)  |
| 8 | DGKat OUT RJ-45 TP Connector | Connect to a compatible DGKat TP switcher or receiver (for example, VS-62D or TP-578HDCP)  |

## 5 Connecting the WP-577VH



Always switch off the power to all devices before connecting them to your **WP-577VH**. After connecting your **WP-577VH**, connect its power and then switch on the power to the other devices.

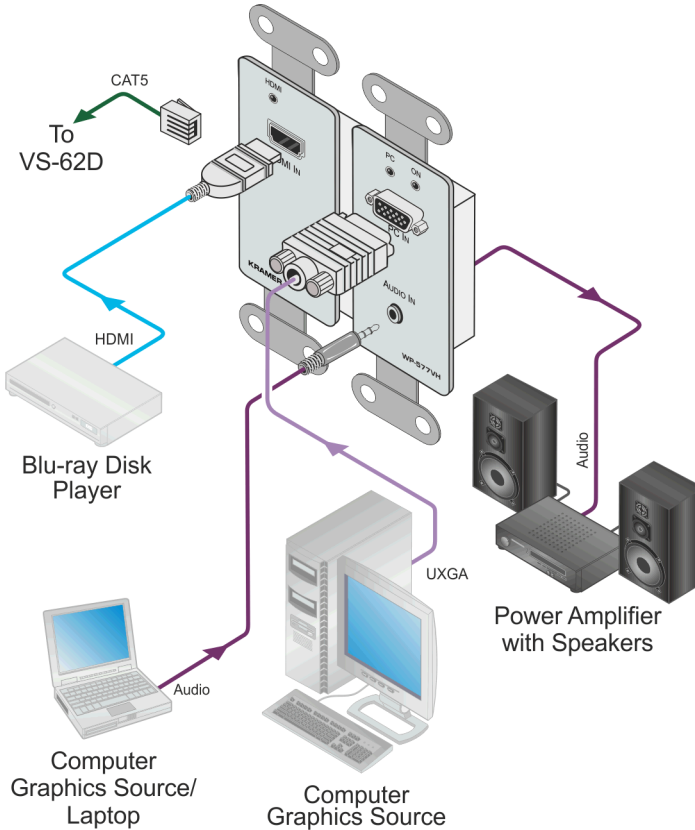


Figure 3: Connecting the WP-577VH Wall Plate

To connect the **WP-577VH** as illustrated in the example in [Figure 3](#):

1. Connect the DGKat Out RJ-45 connector on the **WP-577VH** to the Line In RJ-45 connector on the **VS-62D** using STP cable (see [Section 3.1](#)).

2. Connect the RS-232 3-pin terminal block on the rear of the **WP-577VH** to a remote serial device (controller or to be controlled).
3. If not using PowerConnect, connect the power adapter to the **WP-577VH** and to the mains electricity (not shown in [Figure 3](#)).
4. Connect an HDMI source, (for example, a Blu-ray disk player) to the HDMI input on the **WP-577VH**.
5. Connect a VGA source, (for example, a computer graphics source) to the PC In on the **WP-577VH**.
6. Connect an unbalanced, stereo audio source, (for example, the audio output of the laptop) to the Audio In 3.5mm mini jack on the **WP-577VH**.

## 5.1 Connecting the RS-232 Serial Port to a Remote Device

You can connect a serial controller or a device to be controlled to the RS-232 3-pin terminal block on the **WP-577VH**.

### To connect a device to the RS-232 3-pin serial port:

- Connect the TX pin on the 3-pin terminal block to pin 2 (RX) on the 9-pin D-sub connector
- Connect the RX pin on the 3-pin terminal block to pin 3 (TX) on the 9-pin D-sub connector
- Connect the GND pin on the 3-pin terminal block to pin 5 (GND) on the 9-pin D-sub connector

---

## 6 Principles of Operation

This chapter describes the principles of operation of the **WP-577VH** and comprises:

- Active Inputs (see [Section 6.1](#))
- Audio signal priority (see [Section 6.2](#))
- Active and passive data modes (see [Section 6.3](#))

The **WP-577VH** selects video and audio inputs based on the following rules.

### 6.1 Active Input Selection

The video selection mode is set by the DIP-switches (see [Section 8.1](#)) to any of the following:

- Manual
- Last connected
- Priority

In last connected mode the **WP-577VH** selects the input that was the last to be connected. In manual mode the input is selected by sending Protocol 3000 commands. An input selection made by sending a serial command overrides any other current selection.

In Priority mode the input is selected based on the order of priority which is set using the control application. The default order of priority is:

1. HDMI
2. VGA

This priority remains in force until any of the following occurs:

- A remote Protocol 3000 command is sent
- The input signals/connections change

## 6.2 Audio Signal Priority

The device can automatically detect an analog audio signal.

The audio selection mode is set using the DIP-switches (see [Section 8.1](#)) based on the following table.

| DIP-switch #1 | DIP-switch #4 | Analog Audio Present | Audio Used     |
|---------------|---------------|----------------------|----------------|
| On            | Not relevant  | Yes                  | Analog         |
|               |               | No                   | HDMI           |
| Off           | On            | Not relevant         | HDMI           |
| Off           | Off           | Yes                  | Analog         |
|               |               | No                   | Analog (=mute) |

**Note:** During prolonged periods with no audio (10 seconds), the device may interpret this as having no analog audio present and therefore switch back to the embedded audio. In this case, we recommended that audio selection is set to manual.

**Note:** Audio is transmitted even in the absence of video.

## 6.3 Active and Passive Data Modes

The **WP-577VH** can process RS-232 data in either of the following modes:

- Active (K-Link LED lights green)—The data are treated as Kramer Protocol 3000 commands and are processed by the microcontroller of the **WP-577VH** which provides control of the device. In this mode you can also communicate via P3000 commands with remote K-link devices
- Passive (K-Link LED lights red)—The data are treated as raw data and are transmitted over the DGKat link with no processing. In this mode you can control external devices connected to the RS-232 port of a remote K-link device

**Note:** Data is transmitted even when video and audio signals are not present.



## 6.4 Input Connection Timeout

The default delay when switching to a new source when either the active source is lost or a new source is connected is three seconds. The delay when the active source is lost or a new signal is connected can be changed independently using the relevant Protocol 3000 command, (see [Section 11.2](#)).

When the active source is lost, the delay can be set to between 3 seconds and unlimited. When a new signal is connected, the delay can be set to between 0 seconds (immediate) and unlimited.

---

## 7 Operating the WP-577VH

This chapter describes the operation of the **WP-577VH** and comprises:

- Selecting an input (see [Section 6.1](#))
- Selecting active or passive data modes (see [Section 7.2](#))

The **WP-577VH** selects video and audio inputs based on the rules described below.

### 7.1 Selecting an Input

**To select an input in Manual mode:**

- Send a Protocol 3000 serial command selecting the required input, (see [Section 11.2](#))

### 7.2 Selecting Active or Passive Data Mode

**To switch between active and passive data modes:**

- Send a Protocol 3000 command to switch, (see [Section 11.2](#))

—OR—

- Press the K-Link mode switch to toggle between the active and passive data modes

**Note:** Data is still transmitted even in the absence of video and audio signals.

# 8      Configuring and Maintaining the WP-577VH

This chapter describes configuring and maintaining the **WP-577VH** and comprises:

- Setting the configuration DIP-switch (see [Section 6.1](#))
- Updating the firmware (see [Section 6.1](#))

## 8.1      Setting the Configuration DIP-switch

The 4-way dip-switch provides the ability to configure a number of device functions. Push a switch down to turn it on or up to turn it off.

**Note:** The device must be power-cycled whenever a change is made to the switches.

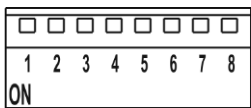


Figure 4: The Configuration DIP-switch

| # | Feature                | Function  | DIP-switch                            |
|---|------------------------|---|---------------------------------------|
| 1 | Audio Auto/Manual Mode | Sets the audio selection mode.<br><b>Note:</b> This setting has no effect when the PC graphics source is selected         | On—Auto<br>Off—Manual                 |
| 2 | Video Auto/Manual Mode | Sets the video selection mode   | On—Auto<br>Off—Manual                 |
| 3 | Input Priority Mode    | Sets the video input automatic selection.<br><b>Note:</b> This selection is available only if DIP-switch 2 is set to Auto | On—Priority<br>Off—Last connected     |
| 4 | Audio Manual Mode      | Sets the audio selection mode   | On—Force embedded<br>Off—Force analog |
| 5 | For future use         |   |                                       |
| 6 |                        |   |                                       |
| 7 |                        |   |                                       |
| 8 | Reserved               |   |                                       |

## 8.2 Updating the Firmware

The firmware is updated using the Kramer **K-Upload** software and connecting via the USB (Program) or RS-232 serial ports.

## 9 Wiring the DGKat TP RJ-45 Connectors

Connect/solder the cable shield to the RJ-45 connector shield.



**Do not use a crossed TP cable with this product.**

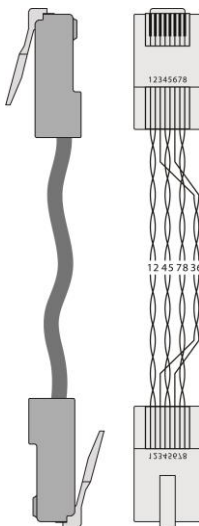
Using a TP cable that is incorrectly wired may cause permanent damage to the device

**Do not** use unshielded TP cables with this product

[Figure 5](#) defines the TP pinout using a straight pin-to-pin cable with RJ-45 connectors.

| EIA /TIA 568B |                |
|---------------|----------------|
| PIN           | Wire Color     |
| 1             | Orange / White |
| 2             | Orange         |
| 3             | Green / White  |
| 4             | Blue           |
| 5             | Blue / White   |
| 6             | Green          |
| 7             | Brown / White  |
| 8             | Brown          |
|               |                |
| Pair 1        | 4 and 5        |
| Pair 2        | 1 and 2        |
| Pair 3        | 3 and 6        |
| Pair 4        | 7 and 8        |

Figure 5: TP Pinout Wiring



# 10 Technical Specifications

|  |   |
|--|---|
| INPUTS:  | 1 HDMI on an HDMI connector<br>1 VGA on a 15-pin HD (F) connector<br>1 Unbalanced stereo audio on a 3.5mm mini jack |
| OUTPUT:  | 1 DGKat TP on an RJ-45 connector<br>1 Unbalanced audio on a 3-pin Terminal Block                                    |
| PORTS:   | 1 Bidirectional serial RS-232 port on a 3-way terminal block  |
| BANDWIDTH:   | Up to 4.95Gbps (1.65Gbps bandwidth per graphic channel)   |
| STANDARDS:   | HDMI, x.v.Color™ and 3D<br>HDCP   |
| MAXIMUM TRANSMISSION DISTANCE:   | 90m (295ft) up to 1080p @60Hz   |
| POWER CONSUMPTION:   | 12V DC, 700mA   |
| OPERATING TEMPERATURE:   | 0° to +40°C (32° to 104°F)  |
| STORAGE TEMPERATURE:   | −40° to +70°C (−40° to 158°F)   |
| HUMIDITY:  | 10% to 90%, RHL non-condensing  |
| DIMENSIONS:  | US: 8.79cm x 4.3cm x 10.47cm (3.46" x 1.69" x 4.12") W, D, H  |
| WEIGHT:  | 0.2kg (0.44lbs) approx.   |
| INCLUDED ACCESSORIES:  | Power supply  |
| Specifications are subject to change without notice at <a href="http://www.kramerelectronics.com">http://www.kramerelectronics.com</a> |   |

## 10.1 Default Communication Parameters

| RS-232         |         |
|----------------|---------|
| Baud Rate      | 115,200 |
| Data Bits      | 8       |
| Stop Bits      | 1       |
| Parity         | None    |
| Command Format | ASCII   |

# 11 Protocol 3000

The **WP-577VH** can be operated using serial commands from a PC, remote controller or touch screen using the Kramer Protocol 3000.

This section describes the:

- Kramer Protocol 3000 syntax (see [Section 11.1](#))
- Kramer Protocol 3000 commands (see [Section 11.2](#))

## 11.1 Kramer Protocol 3000 Syntax

### 11.1.1 Host Message Format

| Start | Address (optional) | Body    | Delimiter |
|-------|--------------------|---------|-----------|
| #     | device_id@         | Message | <b>CR</b> |

#### 11.1.1.1 Simple Command

Command string with only one command without addressing:

| Start | Body  | Delimiter |
|-------|---|-----------|
| #     | Command <b>SP</b> Parameter_1,Parameter_2,... | <b>CR</b> |

#### 11.1.1.2 Command String

Formal syntax with commands concatenation and addressing:

| Start | Address    | Body  | Delimiter |
|-------|------------|---|-----------|
| #     | device_id@ | Command_1 Parameter1_1,Parameter1_2,...<br>Command_2 Parameter2_1,Parameter2_2,...<br>Command_3 Parameter3_1,Parameter3_2,... | <b>CR</b> |

### 11.1.2 Device Message Format

| Start | Address (optional) | Body    | delimiter    |
|-------|--------------------|---------|--------------|
| ~     | device_id@         | Message | <b>CR LF</b> |

#### 11.1.2.1 Device Long Response

Echoing command:

| Start | Address (optional) | Body   | Delimiter    |
|-------|--------------------|--|--------------|
| ~     | device_id@         | Command <b>SP</b> [Param1 ,Param2 ...] <b>result</b> | <b>CR LF</b> |

**CR** = Carriage return (ASCII 13 = 0x0D)

**LF** = Line feed (ASCII 10 = 0x0A)

**SP** = Space (ASCII 32 = 0x20)

### 11.1.3 Command Terms

#### Command

A sequence of ASCII letters ('A'-'Z', 'a'-'z' and '-').

Command and parameters must be separated by at least one space.

#### Parameters

A sequence of alphanumeric ASCII characters ('0'-'9', 'A'-'Z', 'a'-'z' and some special characters for specific commands). Parameters are separated by commas.

#### Message string

Every command entered as part of a message string begins with a **message starting character** and ends with a **message closing character**.

**Note:** A string can contain more than one command. Commands are separated by a pipe ( '|' ) character.

#### Message starting character

'#' – For host command/query

'~' – For device response

#### Device ID (Optional, for K-NET)

K-NET Device ID followed by '@'

#### Query sign

'?' follows some commands to define a query request.

#### Message closing character

**CR** – For host messages; carriage return (ASCII 13)

**CRLF** – For device messages; carriage return (ASCII 13) + line-feed (ASCII 10)

#### Command chain separator character

When a message string contains more than one command, a pipe ( '|' ) character separates each command.

Spaces between parameters or command terms are ignored.



#### 11.1.4 Entering Commands

You can directly enter all commands using a terminal with ASCII communications software, such as HyperTerminal, Hercules, etc. Connect the terminal to the serial or Ethernet port on the Kramer device. To enter **CR** press the Enter key. (**LF** is also sent but is ignored by command parser).

For commands sent from some non-Kramer controllers like Crestron, some characters require special coding (such as, /X##). Refer to the controller manual.

#### 11.1.5 Command Forms

Some commands have short name syntax in addition to long name syntax to allow faster typing. The response is always in long syntax.

#### 11.1.6 Chaining Commands

Multiple commands can be chained in the same string. Each command is delimited by a pipe character ("|"). When chaining commands, enter the **message starting character** and the **message closing character** only once, at the beginning of the string and at the end.

Commands in the string do not execute until the closing character is entered.

A separate response is sent for every command in the chain.

#### 11.1.7 Maximum String Length

64 characters

## 11.2 Kramer Protocol 3000 Commands

| Command        | Description                                 |
|----------------|---|
| #              | Protocol handshaking                        |
| AV             | Switch audio and video                      |
| AV-SW-MODE?    | Get auto-switch mode                        |
| AV-SW-TIMEOUT  | Set video auto-switch timeout               |
| AV-SW-TIMEOUT? | Get video auto-switch timeout               |
| BUILD-DATE?    | Read device build date                      |
| CPEDID         | Copy EDID data from the output to the input |
| DEL            | Delete user file                            |
| DIR            | List files in device                        |
| DISPLAY        | Valid / Invalid output                      |
| FACTORY        | Reset to factory default configuration      |
| FORMAT         | Format file system                          |
| FS-FREE?       | Get file system free space                  |
| GEDID          | Read EDID data                              |
| GET            | Get file                                    |
| KLINK_INF      | Turn on or off K-Link "direct"              |
| LDEDID         | Write EDID data to input                    |
| LDFPGA         | Load new FPGA file                          |
| LDFW           | Load new firmware                           |
| LOAD           | Load new Transwitch firmware                |
| MACH-NUM       | Set Machine number                          |
| MODEL?         | Read device model                           |
| NAME           | Set machine (DNS) name                      |
| NAME?          | Query machine (DNS) name                    |
| NAME-RST       | Reset machine name to factory default (DNS) |
| PASS           | Set Password                                |
| PASS?          | Get Password                                |
| RESET          | Reset device                                |
| SECUR          | Start/Stop Security                         |
| SECUR?         | Get security state                          |
| SIGNAL         | Valid / Invalid input                       |
| SN?            | Read device serial number                   |
| UPGRADE        | Execute firmware upgrade                    |
| VERSION?       | Read device firmware version                |
| VID            | Switch video only                           |
| VID?           | Read video connection                       |

## LIMITED WARRANTY

The warranty obligations of Kramer Electronics for this product are limited to the terms set forth below:

### What is Covered

This limited warranty covers defects in materials and workmanship in this product.

### What is Not Covered

This limited warranty does not cover any damage, deterioration or malfunction resulting from any alteration, modification, improper or unreasonable use or maintenance, misuse, abuse, accident, neglect, exposure to excess moisture, fire, improper packing and shipping (such claims must be presented to the carrier), lightning, power surges, or other acts of nature. This limited warranty does not cover any damage, deterioration or malfunction resulting from the installation or removal of this product from any installation, any unauthorized tampering with this product, any repairs attempted by anyone unauthorized by Kramer Electronics to make such repairs, or any other cause which does not relate directly to a defect in materials and/or workmanship of this product. This limited warranty does not cover cartons, equipment enclosures, cables or accessories used in conjunction with this product.

Without limiting any other exclusion herein, Kramer Electronics does not warrant that the product covered hereby, including, without limitation, the technology and/or integrated circuit(s) included in the product, will not become obsolete or that such items are or will remain compatible with any other product or technology with which the product may be used.

### How Long Does this Coverage Last

Seven years as of this printing; please check our Web site for the most current and accurate warranty information.

### Who is Covered

Only the original purchaser of this product is covered under this limited warranty. This limited warranty is not transferable to subsequent purchasers or owners of this product.

### What Kramer Electronics will do

Kramer Electronics will, at its sole option, provide one of the following three remedies to whatever extent it shall deem necessary to satisfy a proper claim under this limited warranty:

1. Elect to repair or facilitate the repair of any defective parts within a reasonable period of time, free of any charge for the necessary parts and labor to complete the repair and restore this product to its proper operating condition. Kramer Electronics will also pay the shipping costs necessary to return this product once the repair is complete.
2. Replace this product with a direct replacement or with a similar product deemed by Kramer Electronics to perform substantially the same function as the original product.
3. Issue a refund of the original purchase price less depreciation to be determined based on the age of the product at the time remedy is sought under this limited warranty.

### What Kramer Electronics will not do Under This Limited Warranty

If this product is returned to Kramer Electronics or the authorized dealer from which it was purchased or any other party authorized to repair Kramer Electronics products, this product must be insured during shipment, with the insurance and shipping charges prepaid by you. If this product is returned uninsured, you assume all risks of loss or damage during shipment. Kramer Electronics will not be responsible for any costs related to the removal or re-installation of this product from or into any installation. Kramer Electronics will not be responsible for any costs related to any setting up this product, any adjustment of user controls or any programming required for a specific installation of this product.

### How to Obtain a Remedy under this Limited Warranty

To obtain a remedy under this limited warranty, you must contact either the authorized Kramer Electronics reseller from whom you purchased this product or the Kramer Electronics office nearest you. For a list of authorized Kramer Electronics resellers and/or Kramer Electronics authorized service providers, please visit our web site at [www.kramerelectronics.com](http://www.kramerelectronics.com) or contact the Kramer Electronics office nearest you.

In order to pursue any remedy under this limited warranty, you must possess an original, dated receipt as proof of purchase from an authorized Kramer Electronics reseller. If this product is returned under this limited warranty, a return authorization number, obtained from Kramer Electronics, will be required. You may also be directed to an authorized reseller or a person authorized by Kramer Electronics to repair the product.

If it is decided that this product should be returned directly to Kramer Electronics, this product should be properly packed, preferably in the original carton, for shipping. Cartons not bearing a return authorization number will be refused.

### Limitation on Liability

THE MAXIMUM LIABILITY OF KRAMER ELECTRONICS UNDER THIS LIMITED WARRANTY SHALL NOT EXCEED THE ACTUAL PURCHASE PRICE PAID FOR THE PRODUCT. TO THE MAXIMUM EXTENT PERMITTED BY LAW, KRAMER ELECTRONICS IS NOT RESPONSIBLE FOR DIRECT, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES RESULTING FROM ANY BREACH OF WARRANTY OR CONDITION, OR UNDER ANY OTHER LEGAL THEORY. Some countries, districts or states do not allow the exclusion or limitation of relief, special, incidental, consequential or indirect damages, or the limitation of liability to specified amounts, so the above limitations or exclusions may not apply to you.

### Exclusive Remedy

TO THE MAXIMUM EXTENT PERMITTED BY LAW, THIS LIMITED WARRANTY AND THE REMEDIES SET FORTH ABOVE ARE EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES, REMEDIES AND CONDITIONS, WHETHER ORAL OR WRITTEN, EXPRESS OR IMPLIED. TO THE MAXIMUM EXTENT PERMITTED BY LAW, KRAMER ELECTRONICS SPECIFICALLY DISCLAIMS ANY AND ALL IMPLIED WARRANTIES, INCLUDING, WITHOUT LIMITATION, WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. IF KRAMER ELECTRONICS CANNOT LAWFULLY DISCLAIM OR EXCLUDE IMPLIED WARRANTIES UNDER APPLICABLE LAW, THEN ALL IMPLIED WARRANTIES COVERING THIS PRODUCT, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, SHALL APPLY TO THIS PRODUCT AS PROVIDED UNDER APPLICABLE LAW.

IF ANY PRODUCT TO WHICH THIS LIMITED WARRANTY APPLIES IS A "CONSUMER PRODUCT" UNDER THE MAGNUSON-MOSS WARRANTY ACT (15 U.S.C.A. §2301, ET SEQ.) OR OTHER APPLICABLE LAW, THE FOREGOING DISCLAIMER OF IMPLIED WARRANTIES SHALL NOT APPLY TO YOU, AND ALL IMPLIED WARRANTIES ON THIS PRODUCT, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR THE PARTICULAR PURPOSE, SHALL APPLY AS PROVIDED UNDER APPLICABLE LAW.

### Other Conditions

This limited warranty gives you specific legal rights, and you may have other rights which vary from country to country or state to state.

This limited warranty is void if (i) the label bearing the serial number of this product has been removed or defaced, (ii) the product is not distributed by Kramer Electronics or (iii) this product is not purchased from an authorized Kramer Electronics reseller. If you are unsure whether a reseller is an authorized Kramer Electronics reseller, please visit our Web site at [www.kramerelectronics.com](http://www.kramerelectronics.com) or contact a Kramer Electronics office from the list at the end of this document.

Your rights under this limited warranty are not diminished if you do not complete and return the product registration form or complete and submit the online product registration form. Kramer Electronics thanks you for purchasing a Kramer Electronics product. We hope it will give you years of satisfaction.



For the latest information on our products and a list of Kramer distributors, visit our Web site where updates to this user manual may be found.

**We welcome your questions, comments, and feedback.**

Web site: [www.kramerelectronics.com](http://www.kramerelectronics.com)

E-mail: [info@kramerel.com](mailto:info@kramerel.com)

CE



**SAFETY WARNING**

Disconnect the unit from the power supply before opening and servicing



P/N: 2900-300311



Rev: 1